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10/539,048

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Artur Lachowicz

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DICKSTEIN SHAPIRO LLP  
1177 AVENUE OF THE AMERICAS (6TH AVENUE)  
NEW YORK, NY 10036-2714

EXAMINER

BOYLE, ROBERT C

ART UNIT

PAPER NUMBER

1796

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,048	<b>Applicant(s)</b> LACHOWICZ ET AL.	
	<b>Examiner</b> ROBERT C. BOYLE	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Any rejections stated in the previous Office Action and not repeated below are withdrawn. It is noted that claim 33 has been amended, therefore the objection presented in the previous Office Action is withdrawn. It is noted that claims 1, 6, and 7 have been amended to recite "having only one vinyl group" instead of "monofunctional." This clarifies the scope of claims 4 and 9, and therefore, the 112 rejections of claims 4 and 9 presented in the previous Office Action are withdrawn.
3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on April 03, 2009. In particular, claims 1, 6, and 7 have been amended to include the limitation from the specification "having only one vinyl group". This presents the claims with a scope not previously examined. Therefore, the following action is properly made FINAL.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark et al., U.S. Patent Application Publication 2002/0007009.
5. As to claim 1, Stark teaches the formation of compositions formed by reacting dicarbonyls, diacrylates, and vinyl silane compounds together (abstract; paragraphs

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0014, 0017, 0027, 0031, 0032, and 0037). Stark teaches addition of the above in ranges from 0.05-10 wt% diacrylate (paragraph 0017), 0.05-5.0 wt% vinyl silane (paragraph 0009), and 0-2.0% dicarbonyls. Stark teaches the composition was liquid dispersions (paragraph 0043). The presence of an acryloyl group is inherent in the reaction product of the esters, vinyl compounds, and dicarbonyls.

6. The ranges taught by Stark overlap the ranges recited in claim 1. It is well settled that where prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See MPEP 2144.05; *In re Harris*, 409, F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 3d 1379, 1382 (Fed. Cir 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

7. Claim 2 discloses the vinyl compound is selected from a group that includes ethyl acrylate. Stark teaches reacting acrylic esters in the composition (paragraph 0014).

8. Claim 3 discloses the dicarbonyl is selected from a group that includes acetoacetates. Stark teaches acetoacetoxyethyl acrylate (paragraph 0032).

9. Claim 4 discloses the vinyl compound has at least one additional functional group with atoms other than hydrogen or carbon. Stark teaches trisacetoxylvinylsilane, which has more than one functional group and has silicon and oxygen.

10. Claim 5 discloses the vinyl compound is listed in the claim, which includes glycidyl acrylate. Stark teaches using glycidyl acrylate (paragraph 0031).

11. Claims 6, 7 and 8 disclose the process of preparing the composition which involves reacting the three components, the vinyl compound, the dicarbonyl, and the ester; specifically reacting them in the order of the vinyl compound with the dicarbonyl and then that product with the ester. Stark teaches reacting the constituents all in an initial charge, or where different constituents are added at different times (paragraph 0037).
12. Claim 9 discloses the vinyl compound has an additional functional group that is not a vinyl group. Stark teaches using glycidyl acrylate (paragraph 0031).
13. Claims 10-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark in view of Moy et al., U.S. Patent 5,945,489. The discussion with respect to Stark as set forth in paragraphs 4-12 above is incorporated here by reference.
14. Claims 10 and 33 teach the reaction is carried out in the presence of a catalyst which includes basic compounds having a  $pK > 11$ . Stark does not teach using such a catalyst.
15. Moy teaches using guanidine as a catalyst (column 9, lines 11-16). Therefore, it would have been obvious to one of ordinary skill in the art to use the reactions of Moy with the compositions of Stark to form compositions that are not volatile to be used in low-emission paints because both Stark and Moy teach the reaction of multifunctional compounds such as acetate compounds with acrylate compounds for the use in coatings such as paints (Stark: paragraphs 0002-5; Moy, column 1, lines 5-30). Further, Moy teaches compositions that are not volatile and cannot be readily absorbed through

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the skin (Moy: abstract; column 1, lines 5-30), and Stark is concerned with low-emission paints (Stark: paragraph 0043).

16. Claims 11, 15, 19, 23, and 27 disclose a curing method where the composition is cured by ultraviolet light, electron beam, or heat. Moy teaches curing with ultraviolet light (column 12, lines 20-23).

17. Claims 12, 16, 20, 24, and 28 disclose the curing method is done in the absence of a photoinitiator. Moy teaches samples that were crosslinked with 0% photoinitiator present (column 12, lines 20-23).

18. Claims 13, 14, 17, 18, 21, 22, 25, 26, 29 and 30 disclose a cured product according to the curing method. Moy teaches cured films useful in protective or decorative coatings on wood or metal substrates (column 12, lines 59-62).

19. Claim 31 discloses the dicarbonyl is selected from a group that includes acetoacetates. Stark teaches acetoacetoxyethyl acrylate (paragraph 0032).

20. Claim 32 discloses the vinyl compound has an additional functional group that is not a vinyl group. Stark teaches using glycidyl acrylate (paragraph 0031).

### ***Response to Arguments***

21. Applicant's arguments filed April 3, 2009 have been fully considered but they are not persuasive in part and persuasive in part.

22. Applicant argues that Stark is directed to a solid product in the form of a powder or a dispersion containing the solid. This is not persuasive. Stark teaches using the

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composition as a dispersion in water, and such an aqueous dispersion is overall a liquid (paragraph 0043). It is noted that the applicant claims a composition which is a liquid (see instant claim 1). A dispersion in water containing the requisite resin is a liquid composition. Therefore, applicant's argument is not persuasive.

23. Applicant argues that Stark does not suggest that the product is curable and therefore traverses the anticipation rejection. This is not persuasive. Stark notes that precrosslinking monomers and postcrosslinking monomers may be used (paragraph 0017). As crosslinking and curing are substantially the same process, Stark teaches a composition that is able to be crosslinked or cured. Therefore, applicant's argument is not persuasive.

24. Applicant argues that there is not disclosure specifically associating a monofunctional vinyl compound, multifunctional acrylic ester and dicarbonyl compound which has two active hydrogens in the methylene position. Applicant's argument is not persuasive. Stark teaches a compositions where the components include glycidyl acrylate (a multifunctional acrylic ester), vinylsilanes (a multifunctional compound with only one vinyl group) and acetoacetoxyethyl acrylate (a dicarbonyl with two hydrogens in the methylene position) (paragraphs 0027, 0031-32).

25. While no examples with this specific combination of compounds was presented in Stark, this combination would have been readily apparent.

26. In paragraph 0027, Stark states "Examples of suitable silicon compounds b) are" and then lists a series of twelve vinyl silanes that satisfy instant claim 1 out of fifteen compounds. With such a group, it would have been very likely that a compound satisfying claim 1 would have been chosen.

27. In paragraph 0031, Stark states "Preference is given to glycidyl acrylate, glycidyl methacrylate, allyl glycidyl ether, and vinyl glycidyl ether." Given a list of five molecules for component (c), and where glycidyl acrylate is the first on the list, it would have been very likely that glycidyl acrylate, satisfying claim 1, would have been chosen.

28. In paragraph 0032, Stark recites a list of six molecules for component (d) of which acetoacetoxyethyl acrylate is the first. Again, it would have been very likely that acetoacetoxyethyl acrylate, satisfying claim 1, would have been chosen.

29. In light of the above, applicant's argument that a combination of monomers which correspond to claim 1 would be serendipitous is not persuasive. Further, a preferred embodiment is not controlling, rather, all disclosures "including unpreferred embodiments" must be considered. *In re Lamberti* 192 USPQ 278, 280 (CCPA 1976) citing *In re Mills* 176 USPQ 196 (CCPA 1972).

30. Applicant argues that the ranges disclosed by Stark are broad enough to encompass the claimed ranges. Applicant's argument is persuasive. For this reason, the anticipation rejection in view of Stark is withdrawn.



31. Applicant further argues that an obviousness rejection in view of Stark is not viable because Stark is directed to a radical polymerization while the instant application is directed to a Michael addition reaction. This is not persuasive.

32. Claims 1-6, 9, and 11-31 are directed to a curable resin composition obtained by reacting the components recited. Stark forms a curable resin composition by reacting the components. As any mention of the Michael addition reaction is not present in claims 1-6, 9, and 11-31, applicant's arguments do not apply. It is noted that the features upon which applicant relies (i.e., Michael reaction) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

33. As to claims 7-8, 10, and 32-33, Stark teaches that sodium acetate and alkyl sulfonates are used in the formation of the composition (paragraph 0049, Table 1). It is well known that the Michael addition is a base catalyzed reaction, and sodium acetate and alkyl sulfonates are bases. Therefore, it would be obvious that a degree of Michael addition would occur in any composition taught by Stark. Therefore, applicant's argument is not persuasive.

34. Although Stark uses the resin composition in a different capacity than applicant, case law holds that it "does not alter the conclusion that its use in a prior art composition would have been *prima facie* obvious from the purpose disclosed in the reference." *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972). While this motivation may not be

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the same motivation as in the present invention, it is noted that obviousness under 103 is not negated because the motivation to arrive at the claimed invention as disclosed by the prior art does not agree with appellant's motivation. *In re Dillon*, 16 USPQ2d 1897 (Fed. Cir. 1990), *In re Tomlinson*, 150 USPQ 623 (CCPA 1996).

35. Applicant argues the reference Moy does not eliminate any deficiencies in Stark and applicants note that Moy is used to teach catalysts, curing conditions and parameters, and uses of products. Moy is used as a teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, MPEP 2145; *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973); *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention.

36. Applicant argues that there is no appropriate basis for combining Stark and Moy. This is not persuasive.

37. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in

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the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

38. In this case, both Stark and Moy teach the reaction of multifunctional compounds such as acetate compounds with acrylate compounds for the use in coatings such as paints (Stark: paragraphs 0002-5; Moy, column 1, lines 5-30). Further, Moy teaches compositions that are not volatile and cannot be readily absorbed through the skin (Moy: abstract; column 1, lines 5-30), and Stark is concerned with low-emission paints (Stark: paragraph 0043). Therefore, it would have been obvious to one of ordinary skill in the art to use the reactions of Moy with the compositions of Stark to form compositions that are not volatile to be used in low-emission paints.

39. Therefore, applicant's argument is not persuasive.

***Conclusion***

40. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **ROBERT C. BOYLE** whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Friday, 9:00AM-5:00PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. C. B./  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796